Senrigan GP-25 Lite Brushless Gimbal (Preassembled)

Instruction Manual v1.0

Contents

1. Introduction

Features:

-Direct drive of Brushless Motors for both Roll and Tilt axis.

-Full fit to Phantom Quadcopter without any modification.

-Full fit to DJI F450/ 550 Multicopter with "DJI F450 F550 Landing Gear Upgrade Set" (not included).

-Simple and strong Mechanism Design.

-Made of CNC Metal Parts and 3K Carbon Frames which is super light and strong.

-With clean wiring structure design, which provides a 360° mechanic continuous rotation in the Tilt axis and smoothest movement in both two axises!

-Comes with qualified new Simple Brushless Gimbal Controller (Pre-programmed) and 3-Axis IMU Sensor.

-Workable with Alexmos GUI which is the more user friendly interface for tuning and setting if necessary.

-Well tested and PID parameter tuned by the factory for GoPro 1/2/3 cameras.

-Very easy to install and use.

-Compact, light and valuable.

Specification:

-Movement: 2-axis, Roll and Tilt

-Roll control: ±40°

-Tilt control: ±90° (360° mechanic continuous rotation)

-Working Voltage: 3S 11.1V Lipo (default)

-Brushless Gimbal Controller Weight: 13.4g

-IMU Weight: 2.6g

-Brushless Gimbal Motor Weight: 48g /Pcs

-Gimbal Weight (without Gopro): 203g

Included:

1x Senrigan GP-25 Lite Brushless Gimbal (Preassembled)

1x New Simple Brushless Gimbal Controller(Pre-programmed) with 90 Degree Tilting Setting

1x 3-Axis IMU Unit

6x Rubber Tension Damper Balls 200G

1x Tilt and Roll Controlling Connector

1x Power Cable

1x Mount screw pack

(Please be noted that Gopro, Phantom/ F450/ F550 and Battery are not included.)

2. Check List

Please Check the Follow parts.

GP-25 packing	2 pack of the parts	GP-25 Gimbal (Preassembled)
GP-25 Top Mounting Plate (Needed when using on F450/ 550)	6pcs Rubber Tension Damper Balls (Needed when using on F450/ 550)	**On the Left:** Tilt Roll Control Cable (White: Control the ROLL axis, Yellow&Black: Control the TILT) **On the Right**: Power Cable
Nylon rods **On the Left:** 2pcs 9mm Nylon Rod **On the Right:** 3pcs 6mm Rod	4pcs Carbon washers	A: M3*x12mm Hex Cap Screws – 4 pcs B: M3 self lock nut – 5 pcs C. M3*14mm Round Cap Screws – 3 pcs

3. Equipment Required For Assembly

1pcs Gopro Camera (V1,2 or 3) (Default setting is perfect for Gopro 3)	Optional 3S 11.1V Lipo 800mAh (or above) u*sed* to supply power to the Gimbal independently. **In fact we highly recommend you to get the 3S power from the main supply power of your Aircraft (F450/ 550/ Phantom) as to reduce the total flying weight.**

|		
DJI F450 F550 Landing Gear Upgrade Set Model : DJI-F450-550-P01 **This is needed when you are installing the Gp-25 onto DJI F450/ 550 Multicopter.**	Prepare your own DJI F450/F550 Kit.	Or prepare your own DJI phantom kit

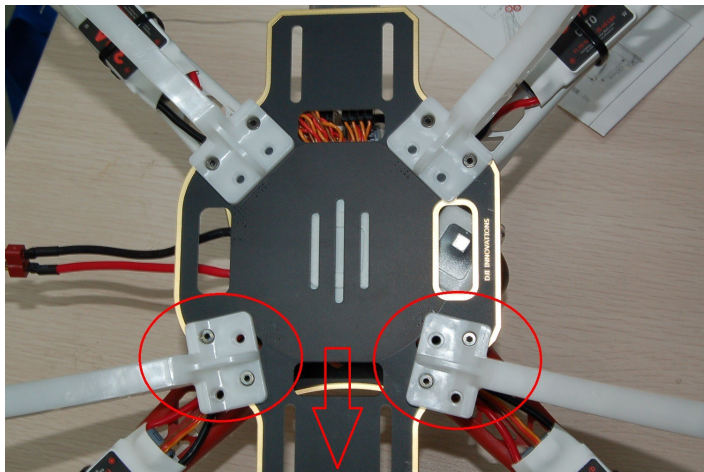|		
AV Cable for Gopro if you want to transmitter the video signal to the gound.	Micro USB Cable if you want to tuning or edit the setting of the Gimbal.	

4. How to connect to DJI F450
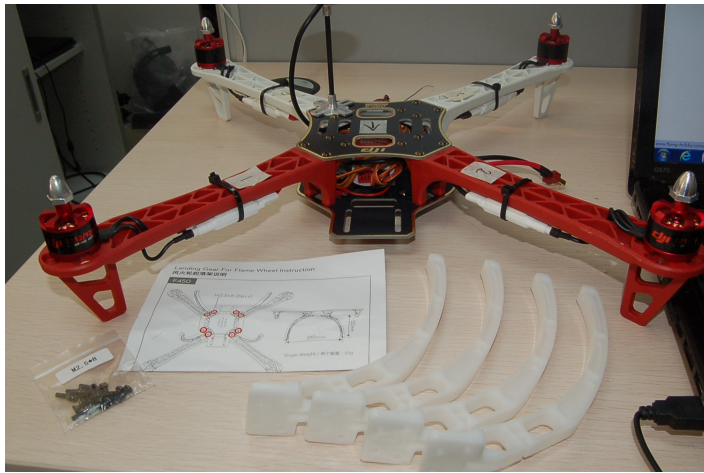
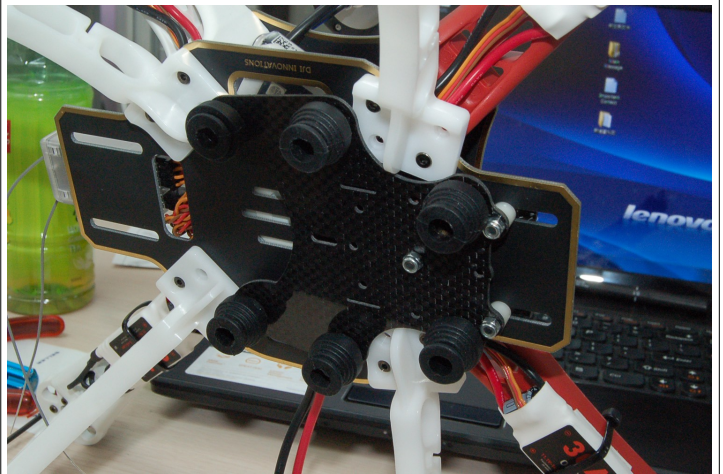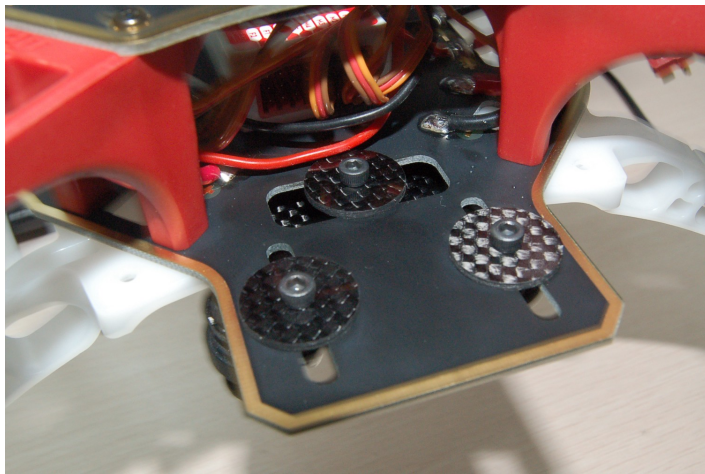|	
Step 1. Install the F450 with the "DJI F450 F550 Landing Gear".	Step 2. Please refer to the manual comes with "DJI F450 F550 Landing Gear".
Step 3. As to fit GP-25 Gimbal, the front landing gear need a special installation position.	Step 4. Top view.
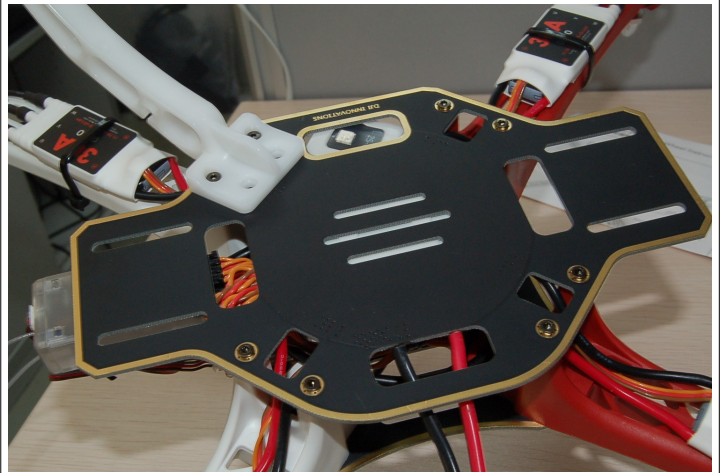
Step 5.
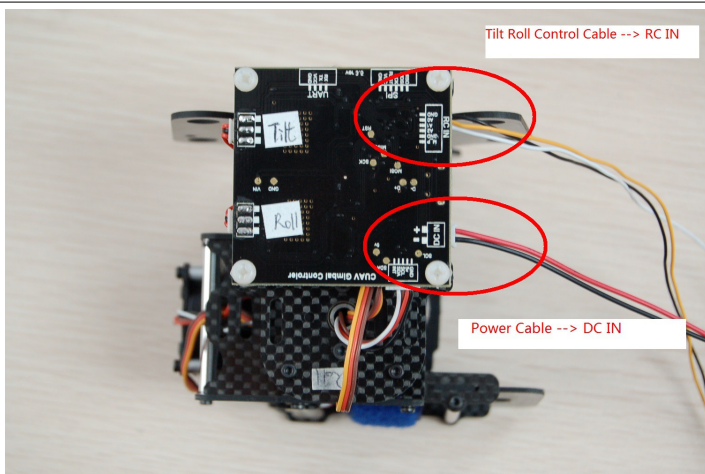Install 6pcs Rubber Tension Damper Balls on the Top Plate.
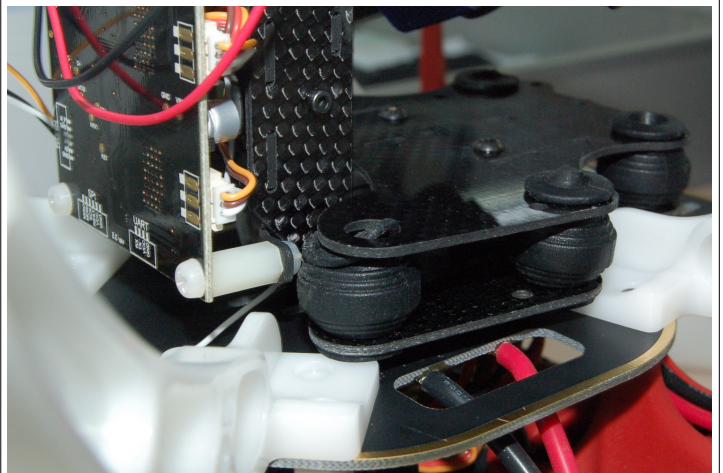
Step 6.
Mount the Top Plate onto the F450.

Step 7.
Use 3pcs carbon washers, 2pcs 6mm Nylon Rods, 3pcs M3*14mm Hex Cap Screws and M3 Self-lock Nuts.
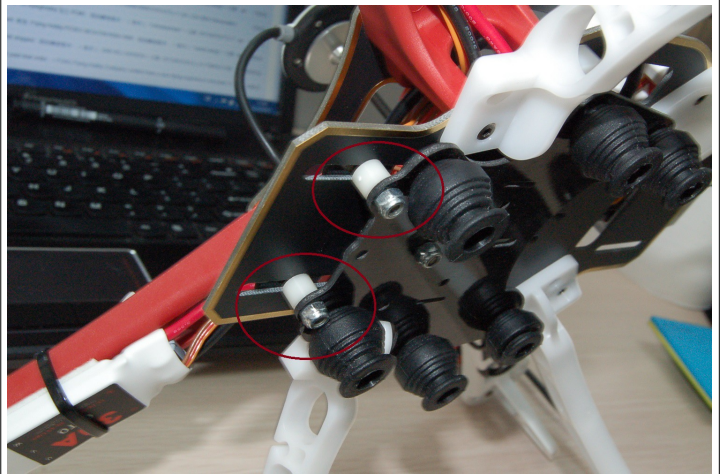
Step 8.
Insert 2pcs 6mm Nylon Rods on the front position and secure with M3 Self-lock Nuts.
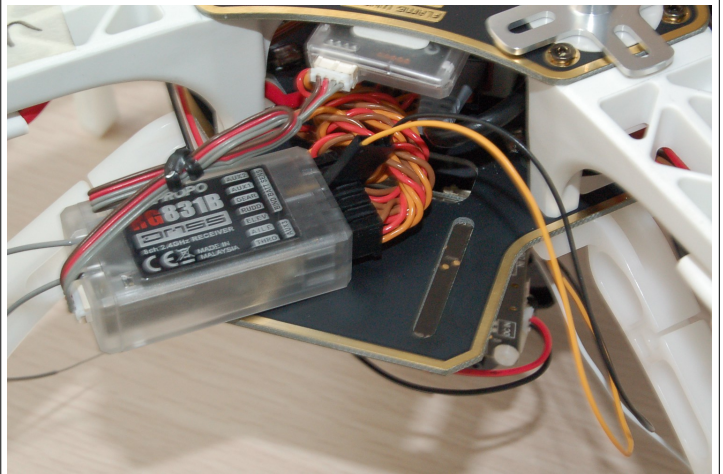
Tilt Roll Control Cable --> RC IN

Power Cable --> DC IN

Step 9.
Connect Tilt Roll Control Cable into the RC IN port ,and the Power Cable into DC IN port.

Step 10.
Install the GP-25 to the 6pcs Dampers on the Top Plate which has been installed on F450 frame.
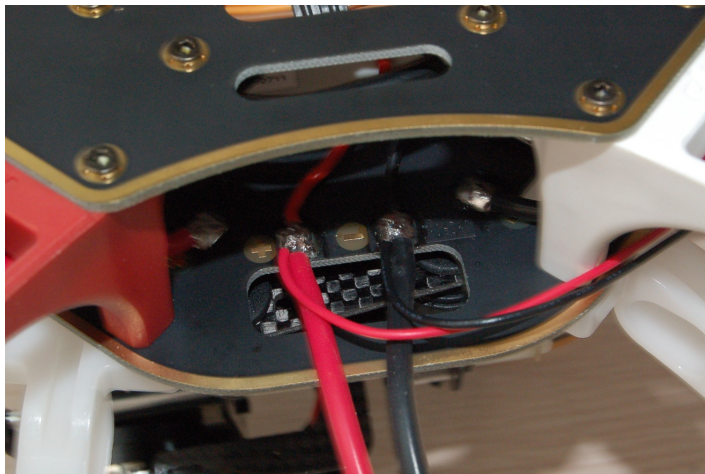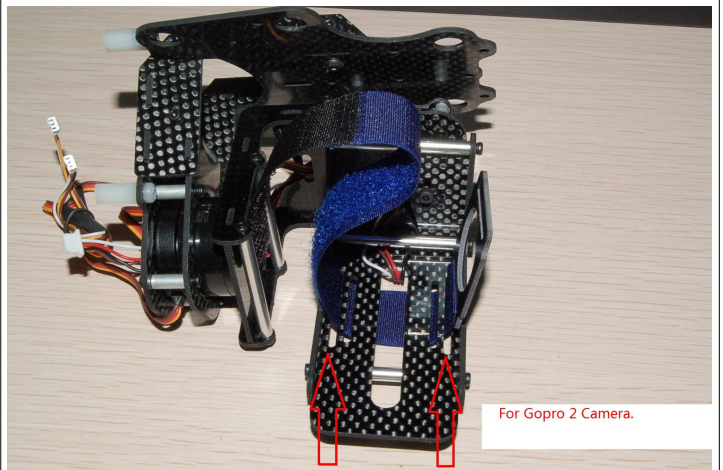
Step 11.
Soldering the Power Cable of GP-25 with any soldering point on the F450. (Important: Red = Positive, Black = Negative, make sure you are using 3S lipo 11.1V for F450 as well.)

Step 12.
Insert the Yellow&Black Connector(used to control the Tilt axis) of the Tilt Roll Cable to the free channel of your receiver (e.g. CH Gear), and assign a potentiometer switch on your TX to control it.
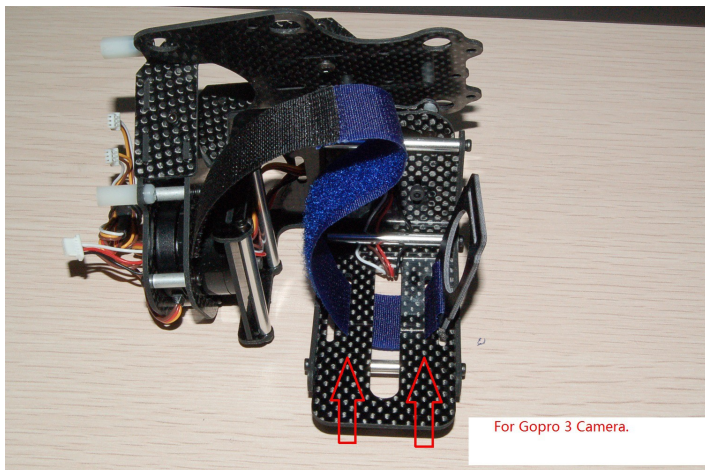
For Gopro 3 Camera.

Step 13.
Use the closer slots when mounting with Gopro3 Cam.
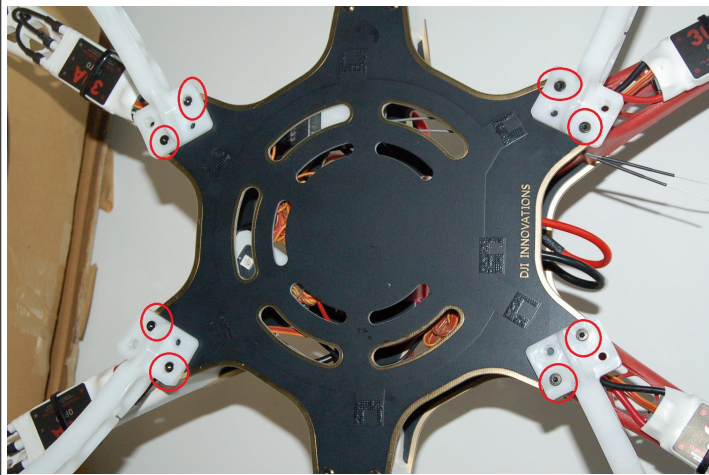

For Gopro 2 Camera.

Step 14.
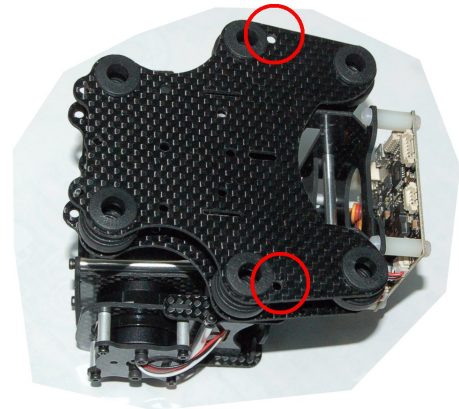Use the outer slots when mounting with Gopro2 Cam.

Step 15.
Mount your Gopro Cam onto the Gimbal. Next go for the **CG Adjustment** section to adjust the CG of the gimbal with the camera as to have stable performance.

5. How to connect to F550

Step 1.
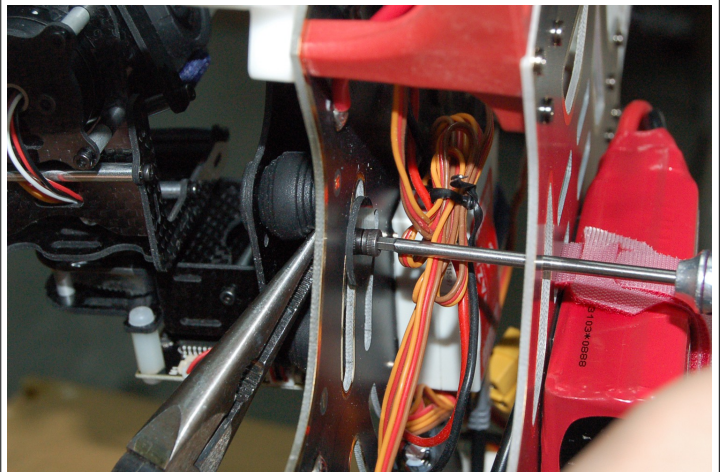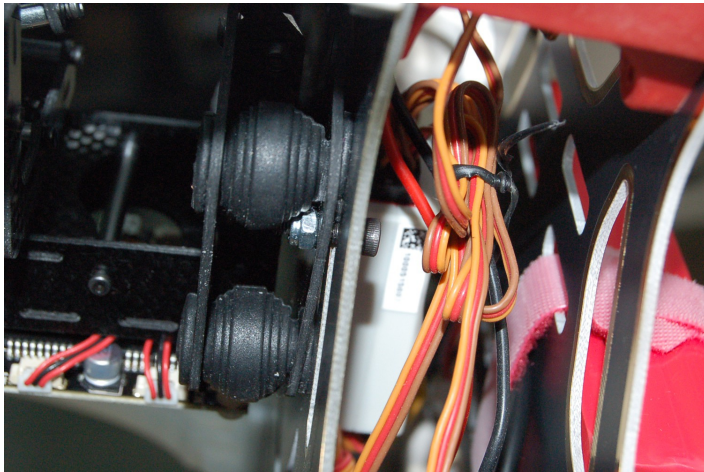Install the "DJI F450 F550 Landing Gear" onto your F550.

Step 2.
Connect the GP-25 with the 6pcs Dampers with the Top Mounting Plate. And 2pcs 3mm holes (circled above) will be used to connect with F550 frame.
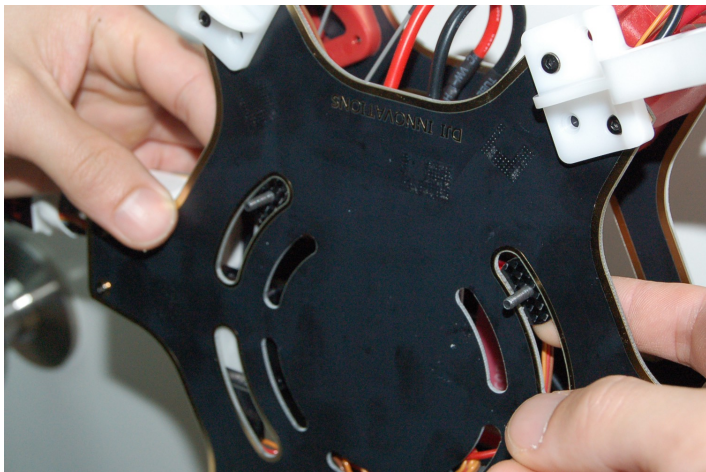
Step 3.
Use 2pcs M3*14 Hex Cap Screws with the Carbon Washer to mount the GP-25 Gimbal.

Step 4.
Install the GP-25 on the F550 frame with M3x14 screws and M3 Self-lock nuts.
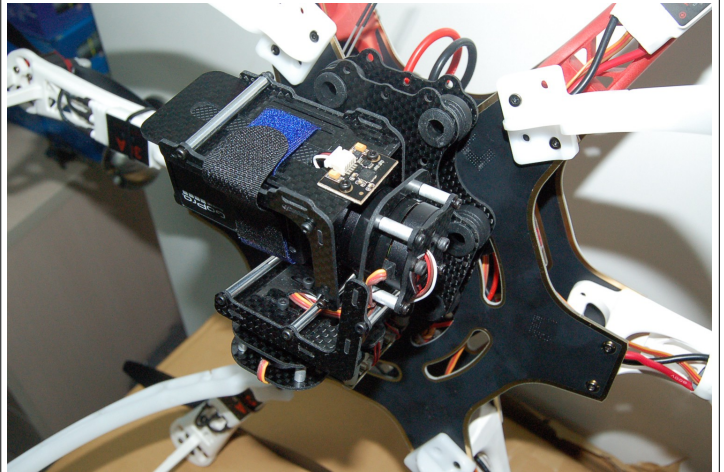
Step 5. Side view.	Step 6. Make sure the Top Plate are secured in the right and flat position.
Step 7. Connect Tilt Roll Control Cable into the RC IN port ,and the Power Cable into DC IN port.	Step 8. Soldering the Power Cable of GP-25 with any soldering point on the F550. (Important: Red = Positive, Black = Negative, make sure you are using 3S lipo 11.1V for F550 as well.)
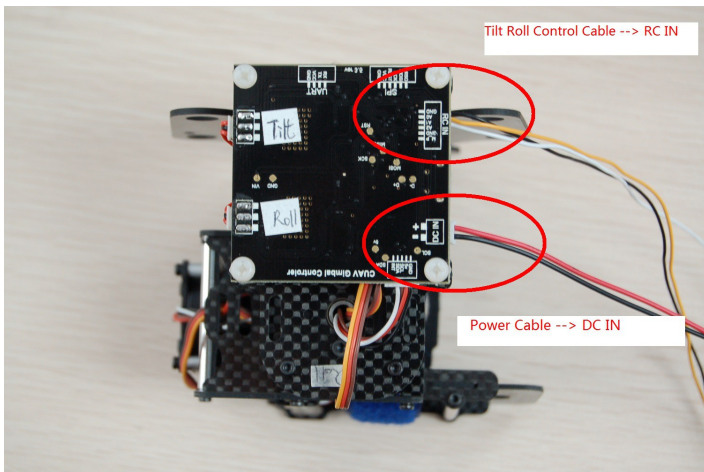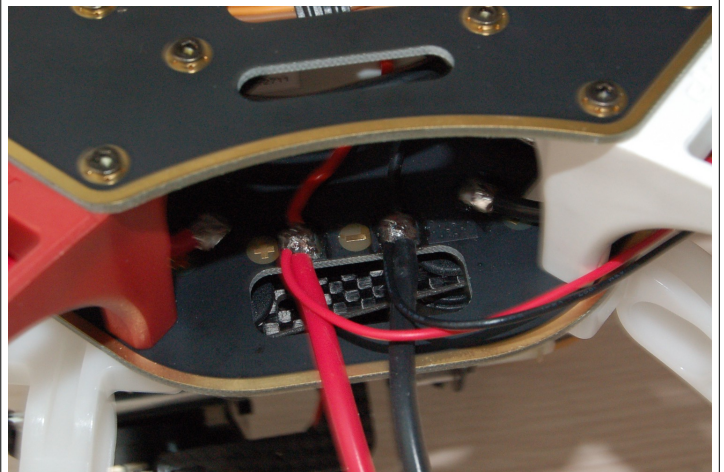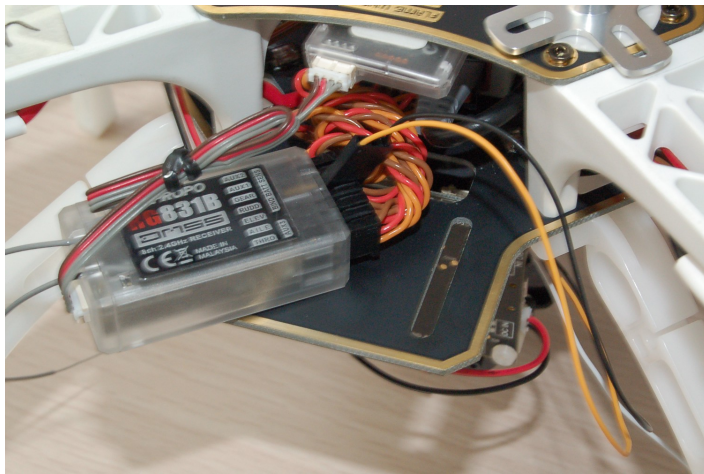
Step 9.
Insert the Yellow&Black Connector(used to control the Tilt axis) of the Tilt Roll Cable to the free channel of your receiver (e.g. CH Gear), and assign a potentiometer switch on your TX to control it.

For Gopro 3 Camera.

Step 10.
Use the closer slots when mounting with Gopro3 Cam.

For Gopro 2 Camera.

Step 11.
Use the outer slots when mounting with Gopro2 Cam.

Step 12.
Mount your Gopro camera onto the Gimbal. Next you will go for the **CG Adjustment** section to adjust a perfect CG of the gimbal with the camera as to have stable performance.

6. How to connect to Phantom.

Step 1.
We need to use the screw holes circled above to install GP-25.
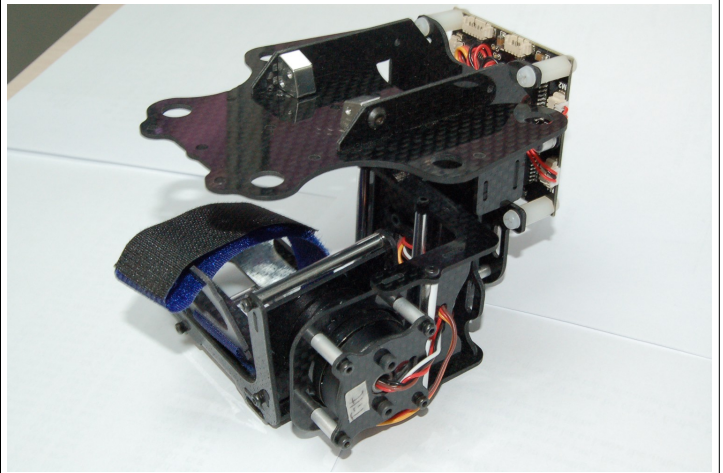
Step 2.
GP-25 Assembly which is completed out of box.
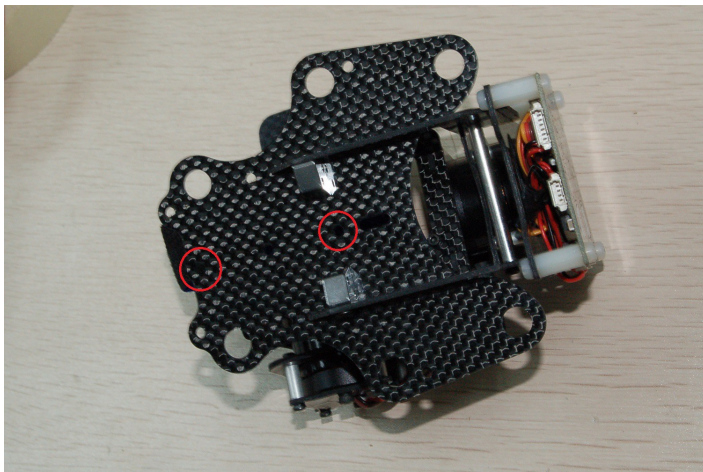
Step 3.
Use the 3mm holes circled above for installation.
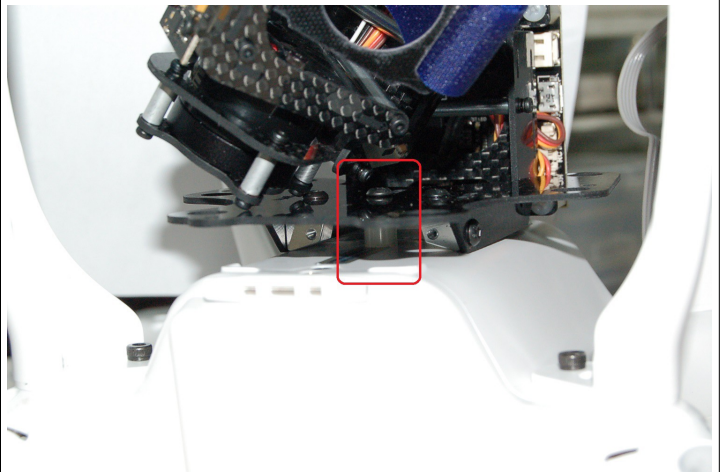
Step 4.
Install GP-25 to the Phantom Frame by using 2pcs M3x14mm Round Cap Screws and 2pcs 9mm Nylon Rods. (Apply Thread Locker when securing metal to metal parts.)

Step 5.
Close view.
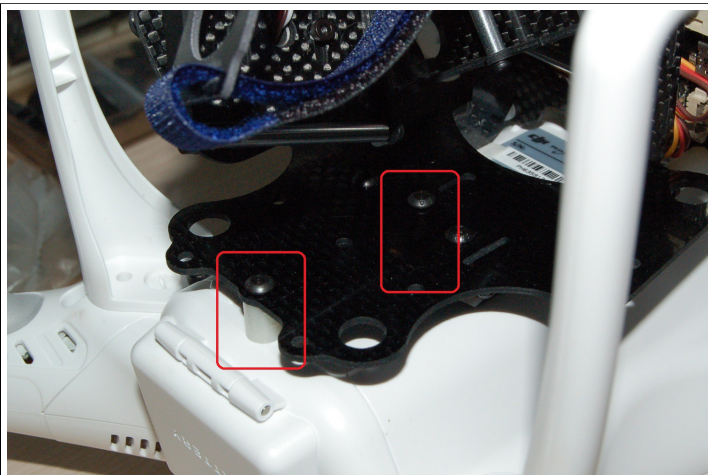
Step 7.
Close view.
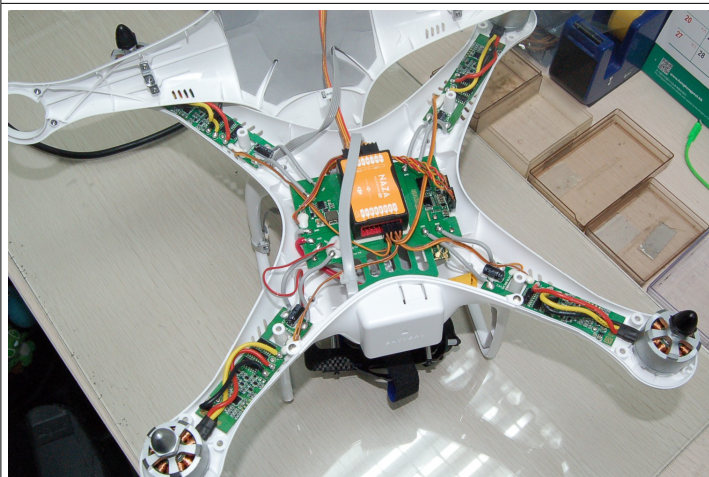
Step 7.
Open the casing of your Phantom.
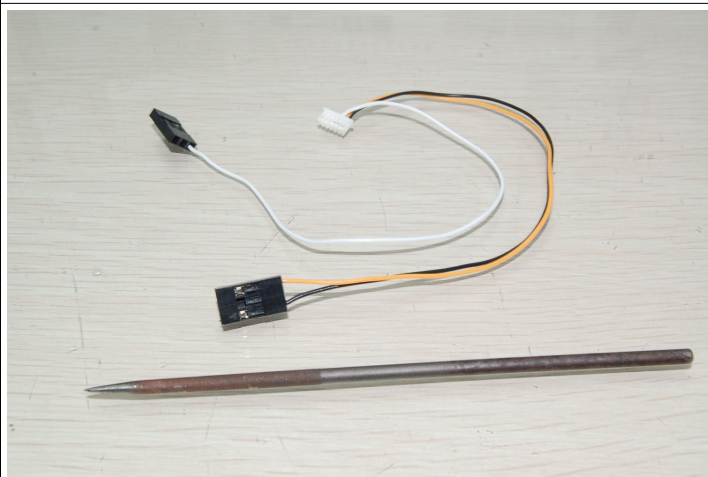
Step 8.
Prepare the Tilt and Roll Control Cable and a point tool.
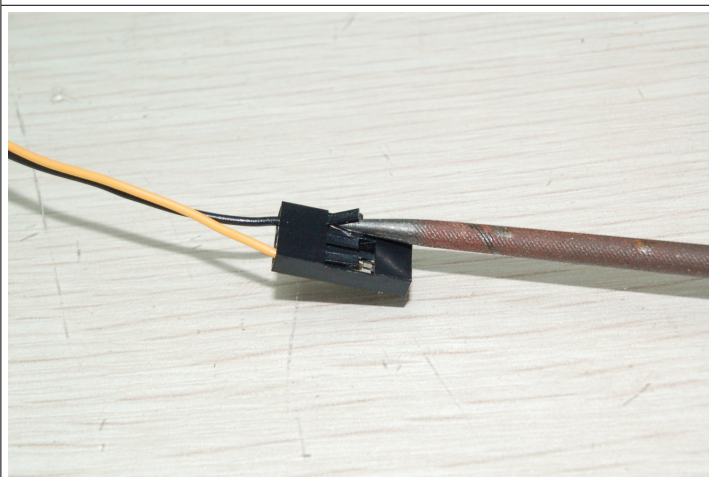
Step 9.
Remove the Black and Yellow wires from the Connector as shown above.
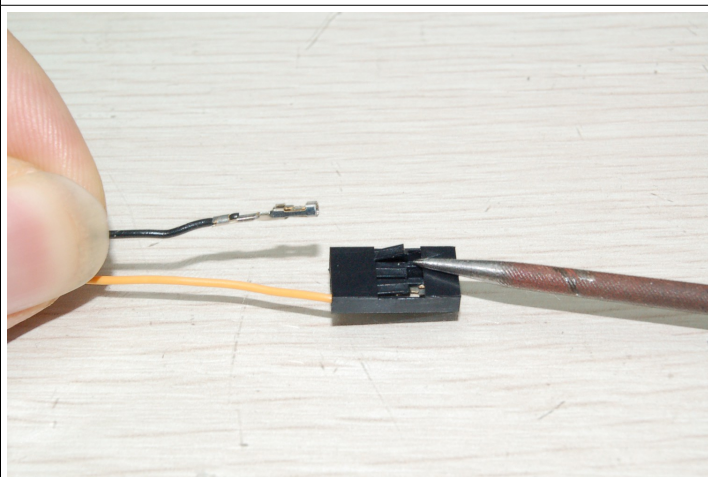
Step 10.
Continuous of Step 9.
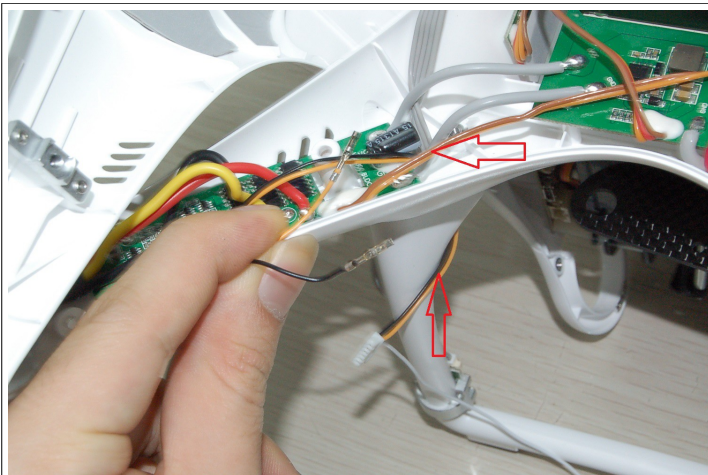
Step 11.
Insert the Black and Yellow wires through the landing gear hole(with the Compass cable) of the Phantom.
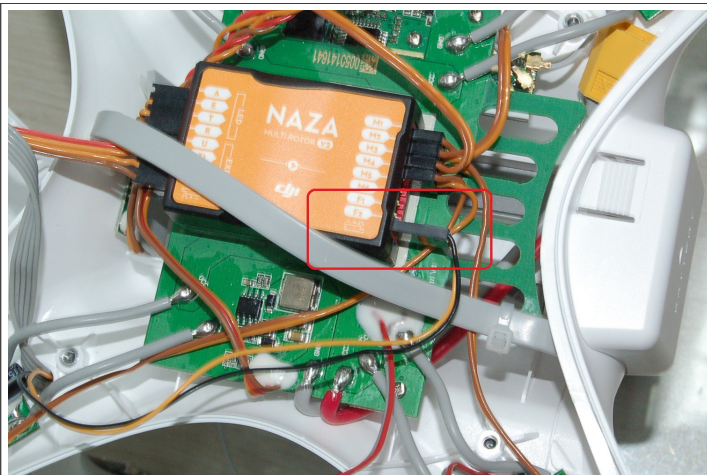
Step 12.
Insert the Black and Yellow wires back to the connector and then insert to the "F2" port of NAZA inside Phantom. (The black wire is facing upward)
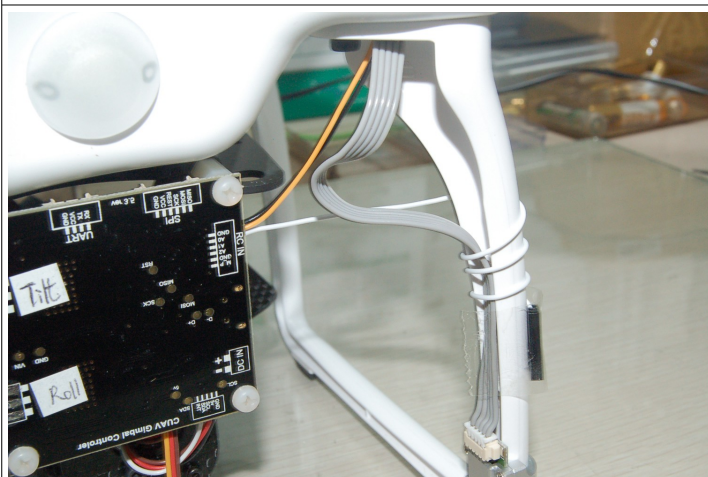
Step 13.
The white wire of the Tilt Roll Controll cable is useless so it can be just put outside of the Phantom.

For power wire
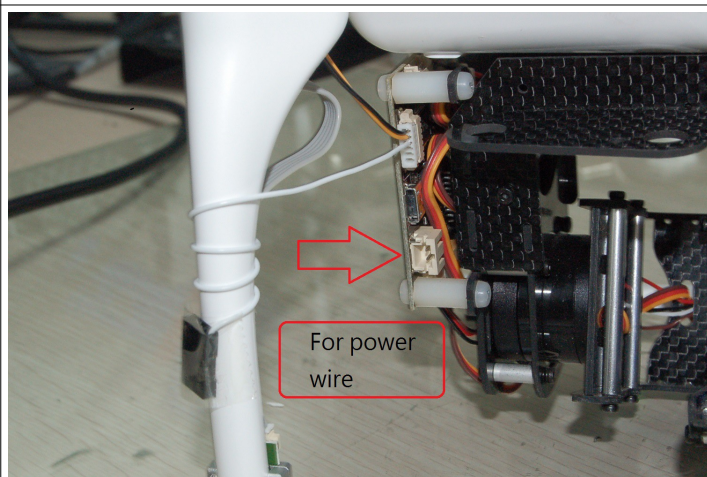
Step 14.
Connect the Power Cable to the DC IN port of the Brushless Gimbal Controller.
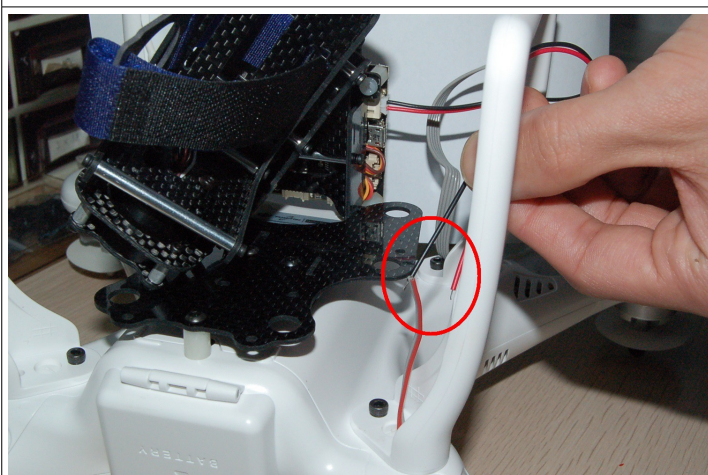
Step 15.
Soldering the Power Cable to the Phantom.
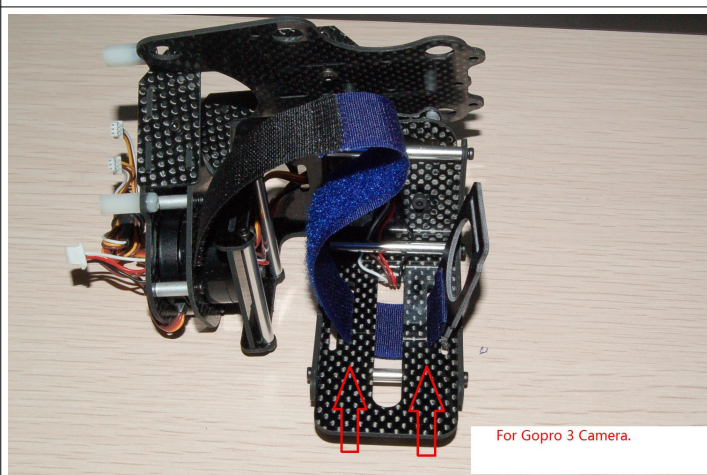
Step 16.
Use the closer slots when mounting with Gopro3 Cam.

For Gopro 3 Camera.
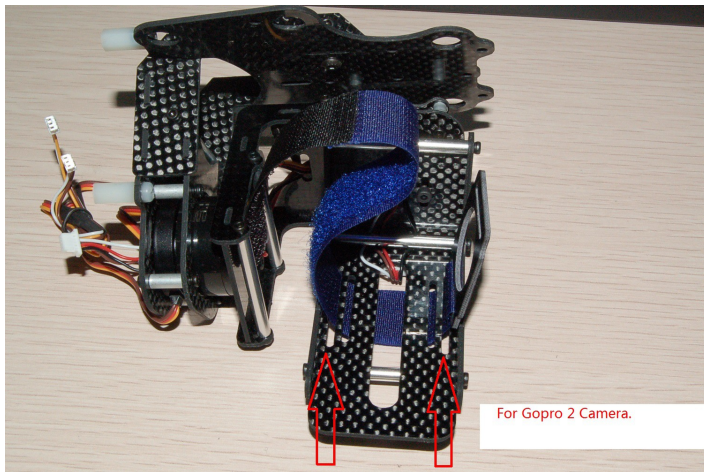
For Gopro 2 Camera.

Step 17.
Use the outer slots when mounting with Gopro2 Cam.

Step 18.
Mount your Gopro camera onto the Gimbal. Next you will go for the **CG Adjustment** section to adjust a perfect CG of the gimbal with the camera as to have stable performance.


Step 19.
Make sure your Phantom Transmitter has a Slide Lever installed so that you can control the Tilting of GP-25.

Step 20.
Connect your Phantom to DJI Assistance Software (please refer to DJI manual for more details), and Calibrate the X1 channel with the Slider Lever on the transmitter.

NAZA-M V2 — English ▾ — ✕

View | Basic | Advanced | Tools | Upgrade | Info

Motor | F/S | IOC | Gimbal | Voltage | Limits

Gimbal Setting

Ground

If you use a gimbal, please configure the parameters on this page. This system supports 2-axis gimbals with servo with a 1520us center point. Make sure the connection is correct.

Important
If you enable the gimbal control in assistant software during the configuration, please note that there will be outputs from F1 and F2 ports. NEVER connect F1/F2 to ESCs wired to motors with propellers.

Gimbal Switch
● ON ○ OFF   Output Frequency: 50hz ▾

Servo Travel Limit

	MAX	Center	MIN
Pitch F2	1000	0	-1000
Roll F1	1000	0	-1000

Automatic Control Gain

	Gain	Direction
Pitch F2	0.00	REV
Roll F1	0.00	REV

Manual Control Speed
Pitch X1 100

default

MODE: GPS Atti.   MC OUTPUT: OFF

NAZA-M V2 — English ▾ — ✕

View | Basic | Advanced | Tools | Upgrade | Info

Aircraft | Mounting | RC | Gain

Gain Adjustment

What is the Gain
- If basic Gain is too large, you will find the aircraft oscillating in the corresponding direction. If too small, the operation and stability will not be so good or control could even be lost.
- Attitude Gain determines the reaction speed of attitude with command stick input, the larger the value the quicker the reaction. Increase it for sharper and quicker leveling action.

Why Gain Adjustment is Necessary
Different aircraft have different gains, so that you can setup the Gain manually according to your aircraft to have a precise flying experience.

Tips
- The Pitch/Roll Gain of hexa-rotor are usually higher than a quad-rotor.
- If the aircraft parts are not compatible, you cannot get good flight experience by adjusting the Gains.

	Pitch	Roll	Yaw	Vertical
Basic Gain	125%	125%	120%	100%
Remote Adjust	INH	INH	INH	INH
Attitude Gain	120%	120%		
Remote Adjust	INH	INH		

default

MODE: GPS Atti.   MC OUTPUT: OFF

Step 21. Turn on the Gimbal function of the software and adjust the parameters as shown above.	Step 22. Recommended Gain Values for Phantom to have stable performance.

7. CG Adjustment

Step 1.
After the assembly, you will need to check the balance point of the GP-25 with camera mounted on it as to obtain the best performance.

Step 2.
Two axis (horizontal and vertical) can be adjusted with two screws.

For Gopro 3 Camera.

Step 3.
Use the closer slots when mounting with Gopro3 Cam.

For Gopro 2 Camera.

Step 4.
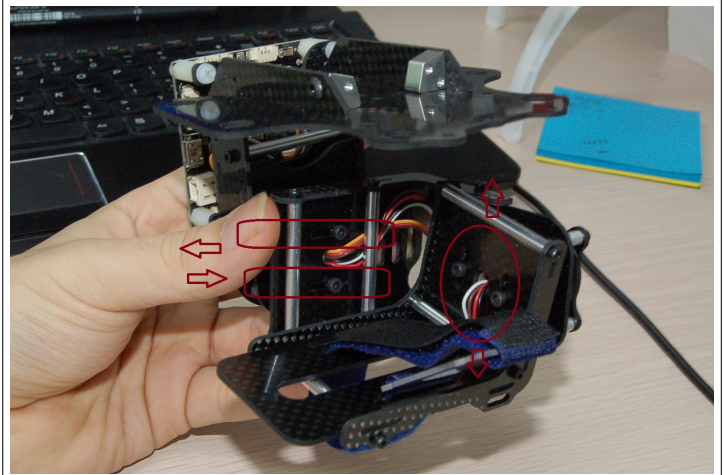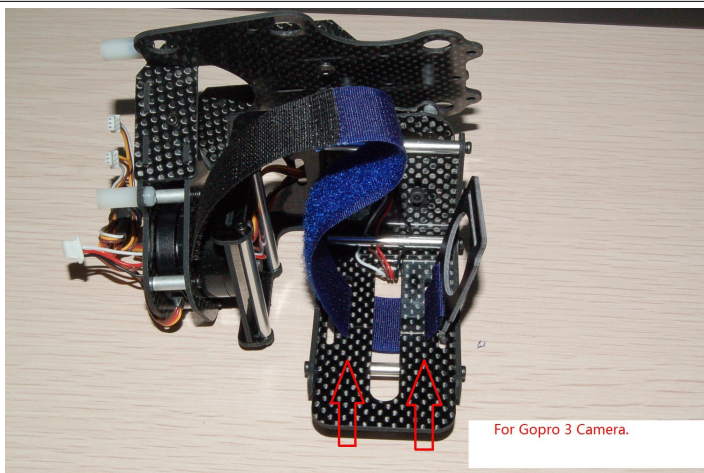Use the outer slots when mounting with Gopro2 Cam.

Step 5.
With the camera mounted on the gimbal, the camera must be steady at horizontal, roll +- 45 degree, tilt +- 45 degree when the CG is good. Otherwise go back to step 4. to adjust the correct CG.
* This is very important for stable performance.

8. Power On Steps

Before Power On the Gimbal:

1. Double check the polarity of the Gimbal Power Cable which is soldered to the F450/550/Phantom's power board or cable. Red = Positive, Black = Negative. (Incorrect polarity will damage the Brushless Gimbal Controller!)

2. Double check the battery polarity before plugged in.

3. Make sure the camera is mounted securely and correctly.

4. Double check the CG of the gimbal with camera mounted.

5. The Brushless Gimbal Controller is preset to plug-n-play with GoPro camera. There is no

additional tuning needed normally.

Follow the following sequencies to power on your Senrigan GP-25 Brushless Gimbal correctly.

Step 1.

Place the F450/550 or Phantom with Senrigan GP-25 Gimbal Assembly on the ground and keep it steady during the starting process.

Step 2.

Turn on your Aircraft transmitter, then connect the Battery(must be 3S lipo) to the power cable of the Aircraft and wait for around 15 seconds. IMU is now initialing. (Do not move the Gimbal during the initialisation process, otherwise the Gimbal will fail to start!)

After the Initialization Process, the Tilt and Roll Motors will move slowly to the center position. The camera is now in level position and ready to fly.

If the Gimbal fail to start as normal, reboot the power and try again. (Remember never move the Aircraft and the Gimbal during the Initialization Process.)

Step 4.

Ready to go!

9. Troubleshooting

Q1: Why does the gimbal not stabilize the camera?

A: Please check the battery voltage (3S lipo must be used) and if the Gimbal Controller LED is lit.

Q2. Why is the captured video shaking?

A: Please ensure your Aircraft is well turned with minimum vibration before mounting the Gimbal. Double check the CG of the Camera, make sure the Camera is well balanced. Refer to CG Adjustment section.

Q3: Do I need to upgrade to latest version of firmware or adjust any parameters?

A: It is not necessary to upgrade the firmware or adjust any parameters unless further instruction is given. The Brushless Gimbal Controller is preset to plug-n-play with GoPro or simlar size camera.

Q4: Where can I get more help for this product?

A: Please contact our distributors for warranty and customer service.

Report any mistakes, please email to: info@alwarerc.com

Related Videos could be found on:

https://www.youtube.com/watch?v=3-gz8JN3kHQ

End Of Manual